



Paul Nace & Associates, LLC

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Massachusetts Advanced Biofuels Task Force
Massachusetts Executive Office of Energy & Environmental Affairs
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Boston, MA 02114
Attn: Steven Clarke
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Gentlemen:

I submit this testimony as a Massachusetts businessman involved in the commercialization of technologies and the development of facilities for the production of cellulosic fuels, fuel additives and chemicals. My roles are those of active stockholder in Biofine Technology, Inc, a technology holding company, and managing partner of entities involved in biorefinery development throughout New England. In these capacities, I ask that any effort to promote advanced biofuels and the clean energy sector abandon its favoritism for cellulosic ethanol, vegetable oil derived biodiesel or any other specific fuel. **For the benefit of our efforts and in the interests of the Commonwealth, we advocate a policy that is *technology neutral, feedstock neutral* and produces *tax parity* among the alternatives.**

Many millions of dollars have been spent in our businesses and universities to explore alternative fuels and chemicals produced from a variety of recurring and renewable biomass feedstocks. These promising technologies are capable of producing mixed alcohols, esters, ethers, and bio-derived hydrocarbons that will be the fuels of tomorrow. Favoring ethanol and biodiesel over other possible fuels both discounts the viability of this research and places an unnecessary and specific burden on the burgeoning biofuels industry.

The lack of parity resulting from the current language in the recent Massachusetts Biofuels Clean Energy Sector legislation could create a significant competitive disadvantage, by making most advanced biofuels ineligible for the cellulosic tax credit. At the federal level, the most recent Energy Bill included language broadening the definitions in the Renewable Fuel Standard to include these alternatives.

There are a number of fuels beyond ethanol - including those fuels nearest to achieving commercial production - that can be produced from cellulose. Ethers and esters, for

example, are often superior to alcohols as renewable fuels in both their handling and combustion qualities. They are also more likely to be locally produced.

Cellulosic ethanol is generally produced using an enzymatic process that produces sugars for fermentation, and these special 'bugs' require a uniform feedstock like that found in concentrated agricultural streams such as corn stover. Enzymatic technologies are not well-suited to other more variable biomass waste streams, such as forest residues, food processing remainders, and municipal solid waste streams. These are precisely the streams most abundant in Massachusetts and the Northeast - which are well-suited for the thermo-chemical processes that produce ethers and esters.

Finally, while in the long run, these ether/ester products would be produced in large volumes for transportation fuels, the market for initial production is as home heating fuel. Certainly, given the current behavior of petroleum-based markets, production of home heating fuel from regional renewable sources at competitive prices is a worthwhile objective. Previous legislation has heavily favored the farm states, basing the ASTM standard for "biodiesel" on the characteristics of agriculturally-produced Fatty Acid Methyl Esters. Because cellulosic fuels do not include the glycerin impurities common to vegetable oil, the esters of these newer and more robust processes fail the ASTM standard, and are ineligible for the proposed tax credit as well. Massachusetts should make every effort to encourage all of the alternative fuel possibilities.

Substituting "cellulosic biofuels" for "cellulosic ethanol" and "biobased replacement diesel" for "biodiesel" in our legislation and discourse would restore parity and enable this industry to develop.

In the longer term, this industry has the potential to revitalize many older industrial facilities throughout Massachusetts and also provide another growing outlet for forest biomass and other readily available feedstocks. Massachusetts and the Northeast could become producers of biofuels and not just be consumers of these fuels produced elsewhere.

I ask that as your Task Force deliberates on programs, projects and activities to promote alternative energy that you maintain *technology neutrality*, *feedstock neutrality* and the resulting *competitive parity* for all the alternatives.

Thank you for your consideration and I would be happy to discuss this in more detail or more specific programs and incentives that should be considered if this would be of value to your efforts.

Very truly yours,



Paul Foley Nace